

## MEAN LAKE LEVELS DURING MAY, 1922.

By UNITED STATES LAKE SURVEY.

[Detroit, Mich., June 5, 1922.]

The following data are reported in the "Notice to Mariners" of the above date:

Data.	Lakes. <sup>1</sup>			
	Superior.	Michigan and Huron.	Erie.	Ontario.
	<i>Fect.</i>	<i>Fect.</i>	<i>Fect.</i>	<i>Fect.</i>
Mean level during May, 1922:				
Above mean sea level at New York.....	601.94	580.40	572.74	246.55
Above or below—				
Mean stage of April, 1922.....	+0.49	+0.47	+0.39	+0.49
Mean stage of May, 1921.....	-0.18	-0.18	-0.35	-0.13
Average stage for May, last 10 years..	-0.20	-0.29	-0.08	-0.17
Highest recorded May stage.....	-1.11	-3.12	-1.68	-2.49
Lowest recorded May stage.....	+1.12	+0.84	+1.43	+1.59
Average relation of the May level to:				
April level.....		+0.30	+0.40	+0.30
June level.....		-0.10	-0.20	-0.20

<sup>1</sup> Lake St. Clair's level: In May, 575.25 feet.

## EFFECT OF WEATHER ON CROPS AND FARMING OPERATIONS, MAY, 1922.

By J. WARREN SMITH, Meteorologist.

May was warmer than normal in all districts except in the Rocky Mountain States and in a small area in the Southeast covering northern Georgia and southeastern Alabama and in extreme southern Florida. The temperature averaged 5° or more a day above the normal in most of the Lake region. During the week ending May 9 the temperature averaged above the normal except in Washington, Oregon, northern Idaho, and western Montana. Freezing occurred from Nevada northward with frost in adjoining districts.

Freezing weather prevailed during the first part of the succeeding week between the Rocky Mountains and the Sierra Nevada and Cascade ranges, with the temperature down to 20° at Flagstaff, Ariz., on the 10th and at Modena, Utah, on the 11th. It was very cold and stormy in the Rocky Mountain and Plateau States and considerable frost damage occurred, although the season was unusually backward. The week continued warmer than normal from the eastern Great Plains eastward. The third week of the month was slightly warmer than normal over the Rocky Mountain and Plateau States and in most of the North, but it was slightly colder in most central and southeastern districts. During the week ending May 30 the temperature averaged above the normal, except in a few southeastern and far northwestern areas. Frost caused moderate damage in the far Northwest on May 26 or 27.

The rainfall for the month, as a whole, was above the normal in central and southern New England, in parts of the central Ohio and central Upper Mississippi Valleys, in most of the south, and in the upper Great Plains. It was below the normal in the Lake region, part of the Middle Atlantic coast, in the lower Ohio and central Mississippi Valleys, the central Great Plains, central and upper Rocky Mountains, and most of the Pacific coast region. The rainfall was over 6 inches in most of the South, in south-central Iowa, and over small areas in west-central Ohio and eastern Montana.

During the week ending May 9 the rainfall was moderate to heavy and rather uniformly distributed east of the

100th meridian. The falls were excessive locally in the lower Mississippi Valley, the central Great Plains, parts of Texas, and along the New England coast. In the week ending the 16th the precipitation was rather heavy in most of the northern Great Plains, along the west Gulf coast, and in parts of Georgia and Kentucky. Snow fell in the upper Great Plains during the storm of the 11th. Heavy to excessive rains fell in the central Great Plains and in many southern districts during the week ending the 23d, and from the lower Mississippi Valley eastward and in parts of the upper Mississippi Valley during the last week of the month. Generous precipitation was received also in northern Idaho, western South Dakota, and much of Montana, being in the form of snow in the northern Rockies.

At the close of the month drought conditions prevailed in western Iowa, southeastern South Dakota, and northeastern Nebraska, as well as in western New Mexico and eastern Arizona. More moisture was needed in the Northeast and in the unirrigated districts of the far West, but there was ample moisture for crop needs in most Central and Eastern States. Flood waters covered large areas of agricultural land in the lower Mississippi Valley during most of the month.

Winter wheat improved under favorable weather conditions in the Northeast and in Montana, but it was too wet and warm in much of the South where rust developed. There was a lack of moisture in some central valley States, and it was too dry and cool in the far Northwest.

Conditions for seeding spring-wheat improved early in the month, the seed germinated quickly, and the prevailing moisture and temperature were favorable for satisfactory development, except in the North Pacific Coast States.

Oats were seeded late in central districts, and there was a lack of moisture in parts of the central Mississippi and lower Missouri Valley States. The crop was in a fairly satisfactory condition at the close of the month in most northern States. The first part of the month was rather unfavorable for the preparation of the ground and planting corn in the Ohio Valley and the Southwest, while cultivation was hindered by rain in some southern districts throughout the month. The temperature was favorable for germination and growth with few exceptions.

Slow progress was made in planting and replanting cotton during the first week in May due to general rains and wet soil. The week ending May 16 was more favorable in the central and eastern portions of the belt, but it continued unfavorable in Oklahoma and much of Texas. The moderate to heavy rains during the week ending May 23 in central and eastern portions of the belt were unfavorable and the nights were too cool for proper germination and growth. Better weather prevailed in the western portion of the belt during the last week in the month, but it was too wet and the latter part of the week too cool in the east Gulf States for satisfactory growth of cotton.

At the close of the month cotton was in fairly good condition in the northern part of the belt and in the extreme southeastern districts, but it was unsatisfactory in central and southwestern regions.

Cold and stormy weather in the Northwest at the beginning of the second decade was decidedly unfavorable for stock and some losses occurred. Pastures made good advance during the month, but meadows were unfavorably affected by a lack of moisture in parts of the middle Atlantic coast, the lower Ohio Valley, the central Mississippi and the lower Missouri Valleys, and the far West.